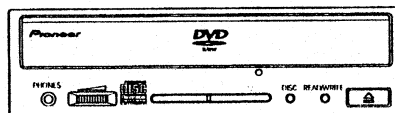


Service Manual

Pioneer



ORDER NO.
PRT-060

DVD-R/RW CD-R/RW WRITER

DVR-A03

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	DVR-A03		
KB	○	DC Power supply from other system	

NECESSARY INFORMATION FOR DHHS RULES MARKED ON THE TOP COVER BELOW:

DANGER – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.

CONTENTS

1. SAFETY INFORMATION	2	4. GENERAL INFORMATION	12
2. EXPLODED VIEWS AND PARTS LIST	4	4.1 DIAGNOSIS	12
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	8	4.1.1 DISASSEMBLY	12
		4.1.2 NO POWER	15
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		5. PANEL FACILITIES AND SPECIFICATIONS	20

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
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PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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T – ZZY MAY. 2001 Printed in Belgium

1. SAFETY INFORMATION

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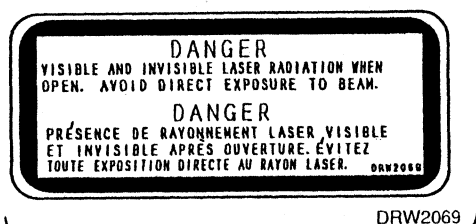
WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

VARO! AVATTAESSA JA SUOJALUKIITUS OHITETTAESSA OLEI ALTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEIYLLE. ÄLÄ KATSO SÄTEESEEN.		WARNING! DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.	
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	LASER kuva 1 Lasersäteilyn varoituserkki	IMPORTANT THIS PIONNER APPARATUS CONTAINS LASER OF CLASS 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.	LASER Picture 1 Warning sign for laser radiation
WARNING! OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	LASER DIODE CHARACTERISTICS MAXIMUM OUTPUT POWER : 35 mw WAVELENGTH : 658 nm		

■ LABEL CHECK



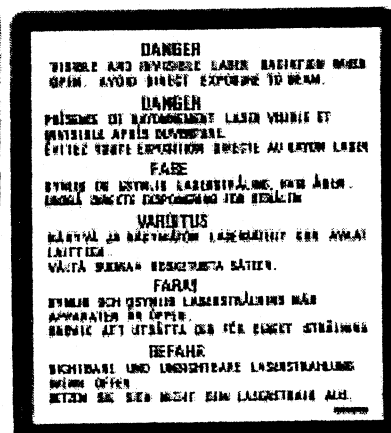
DRW2069

THIS DEVICE COMPLIES WITH PART 6 OF THE FCC RULES, SECTION 2, SUBJECT TO THE FOLLOWING CONDITIONS:
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2. THIS DEVICE MUST ACCEPT ANY INTERFERING RADIOIC
MILLIOWATT INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

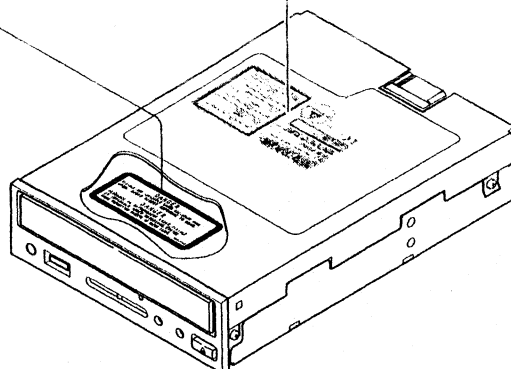
THIS CLASS B RFEMIT APPARATUS COMPLIES WITH CANADIAN
ICES-413.
CET APPAREIL RAYONNANT DE LA CLASSE B EST CONFORME À LA
NORME CAN. 413 DU C.N.S.T.

CERTIFICATION THIS PRODUCT COMPLIES WITH CANIS RULES 2, CITE,
SUBCHAPTER 1, PART 1001 AT DATE OF MANUFACTURE.

CLASS 1 LASER PRODUCT
LASER KLASSE 1



DRW2020



Additional Laser Caution

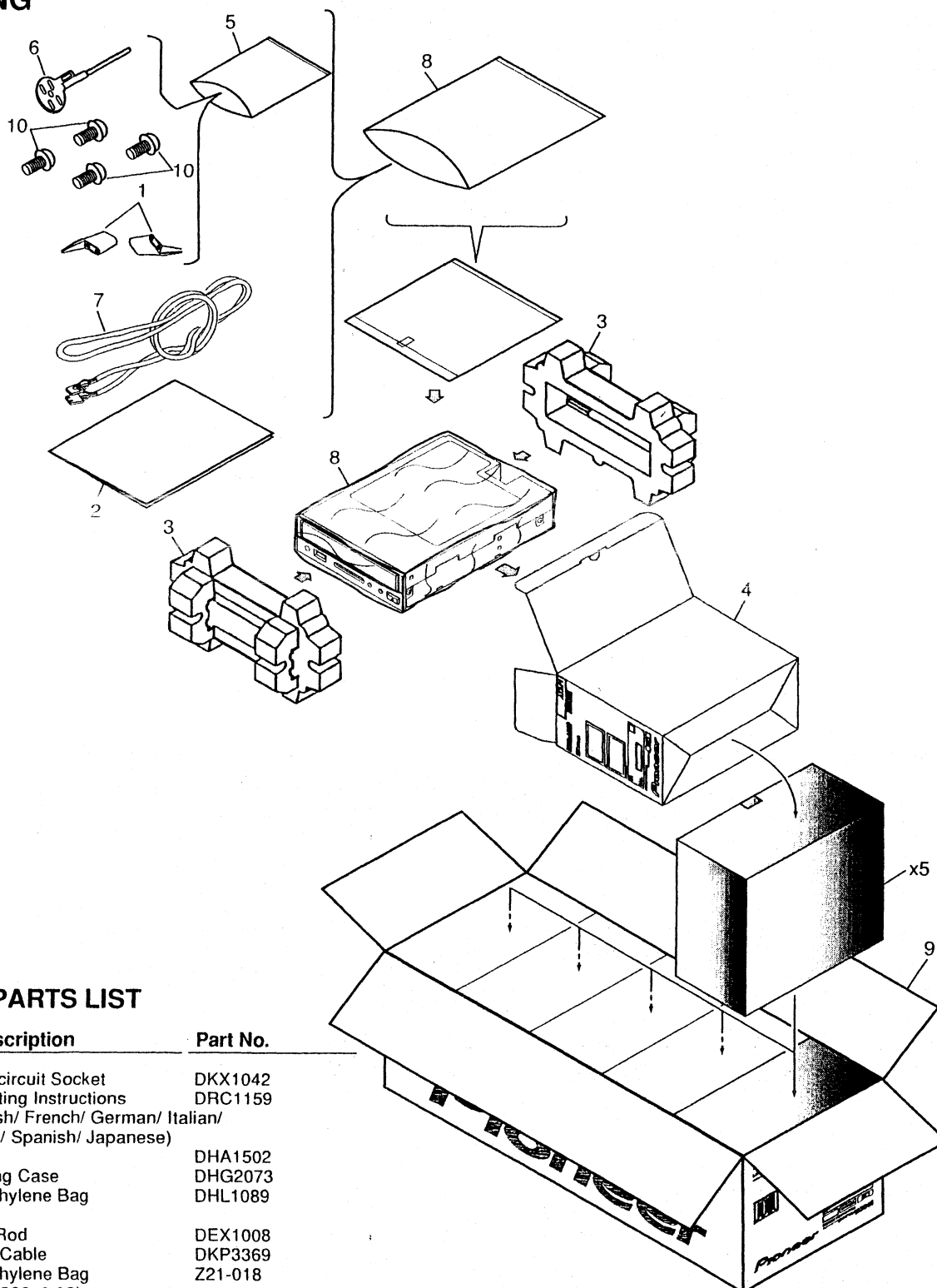
1. The ON/OFF(ON:low level,OFF:high level) status of the CLAMP signals for detecting the loading state are detected by the drive CPUs, and the design prevents laser diode oscillation when the CLAMP signal turns OFF.
In normal operation, if no disc is clamped, the laser diode oscillation is disabled.
However, the interlock does not always operate in the test mode. *
2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 3A laser beam.

* Refer to pages 43.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 ● The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 ● Screws adjacent to ∇ mark on the product are used for disassembly.

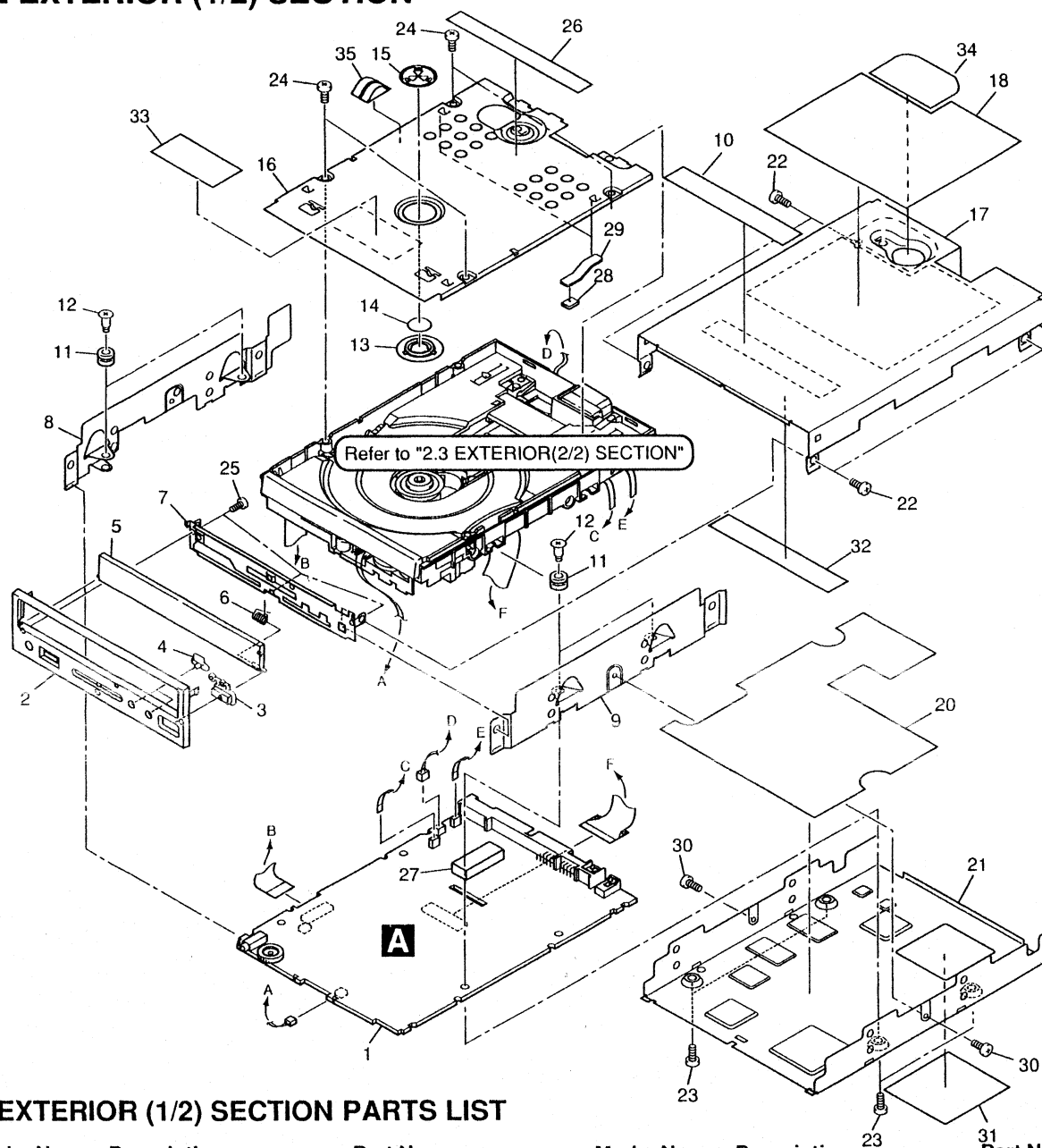
2.1 PACKING



● PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Short-circuit Socket	DKX1042
	2	Operating Instructions (English/ French/ German/ Italian/ Dutch/ Spanish/ Japanese)	DRC1159
	3	Pad	DHA1502
	4	Packing Case	DHG2073
	5	Polyethylene Bag	DHL1089
	6	Push Rod	DEX1008
	7	Audio Cable	DKP3369
NSP	8	Polyethylene Bag (235x320x0.03)	Z21-018
	9	Master Carton (A03)	DHG2149
	10	Mounting Screw	AMZ30P060FMC

2.2 EXTERIOR (1/2) SECTION

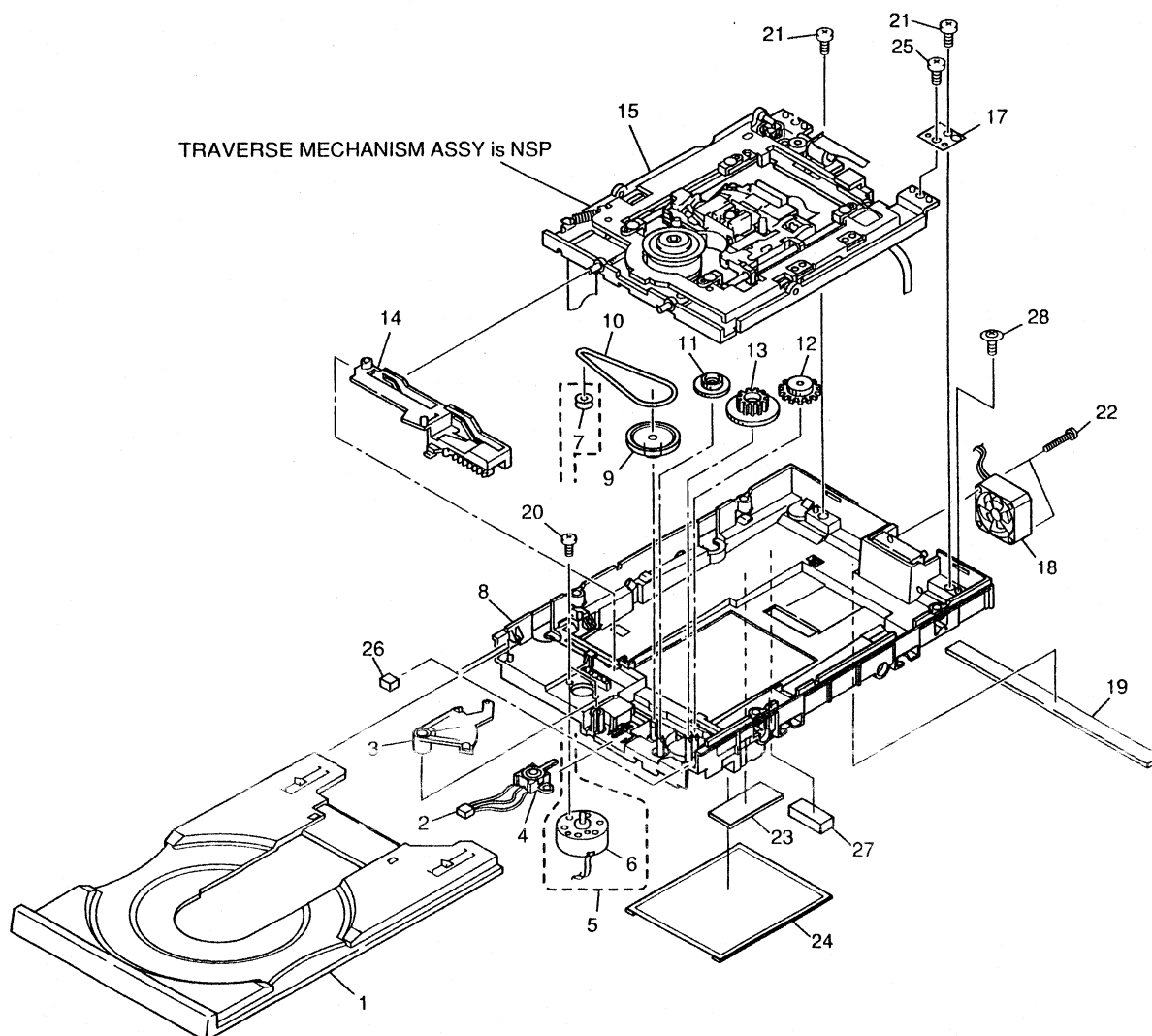


● EXTERIOR (1/2) SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	DVR ATAPI MAIN Assy	-----
	2	Front Bezel R3	DAH1977
	3	Function Button R3	DAC1966
	4	Lens	DAC1855
	5	Front Door R3Z	DAH2016
	6	Door Spring	DBH1477
	7	Shield Plate	DNE1398
	8	Frame L	DNB1084
	9	Frame R	DNB1085
NSP	10	Label	-----
	11	Floating Rubber	DEB1466
	12	Float Screw	DBA1148
	13	Clamper	DNK3829
	14	Clamper Yoke	DNH2467
	15	Upper Clamper	DNK3830
	16	Clamper Holder	DNC1548
NSP	17	Bonnet	-----

Mark	No.	Description	Part No.
NSP	18	Model Label	-----
	19		-----
	20	Sheet	DEB1473
	21	Base Chassis	DNC1549
	22	Screw	BMZ26P050FMC
	23	Screw	PMA26P040FMC
	24	Screw	BPZ26P060FZK
	25	Screw	DBA1154
	26	Air Packing	DEB1474
	27	Air Cushion	DEB1488
	28	Spacer	DEB1483
	29	Plate	DNK3839
	30	Screw	DBA1159
	31	Label	DRW2053
	32	65 Label	ARW7050
	33	Caution Label	DRW2069
	34	Sheet	DEC2421
	35	Stick Finger	DNB1092

2.3 EXTERIOR (2/2) SECTION



● EXTERIOR (2/2) SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Tray	DNK3812	16	•••••		
	2	Connector Assy (3P)	DKP3544	17	Plate	DBK1208	
	3	Eject Lever	DNK3817	18	Fan Motor (25mm)	DXM1123	
	4	S Lever Switch	DSK1001	19	Packing	DEB1474	
	5	Loading Motor Assy	DXX2491	20	Screw	JGZ17P030FMC	
NSP	6	Carriage Motor	-----	21	Screw	BPZ26P060FZK	
NSP	7	Motor Pulley	-----	22	Screw (2.6×16)	DBA1153	
NSP	8	Loading Base	-----	23	Air Cushion	DEB1488	
	9	Gear Pulley	DNK3813	24	Sheet (Rubber)	DEC2411	
	10	Rubber Belt	DEB1465	25	Screw	BMZ26P060FMC	
	11	Gear A	DNK3814	26	Spacer POR (T5)	DEB1485	
	12	Gear C	DNK3816	27	Spacer	DEB1482	
	13	Gear B	DNK3815	28	Screw	VBA1034	
NSP	14	Clamp Cam	-----				
NSP	15	Traverse Mechanism Assy-S	-----				

2.4 OTHER SECTION

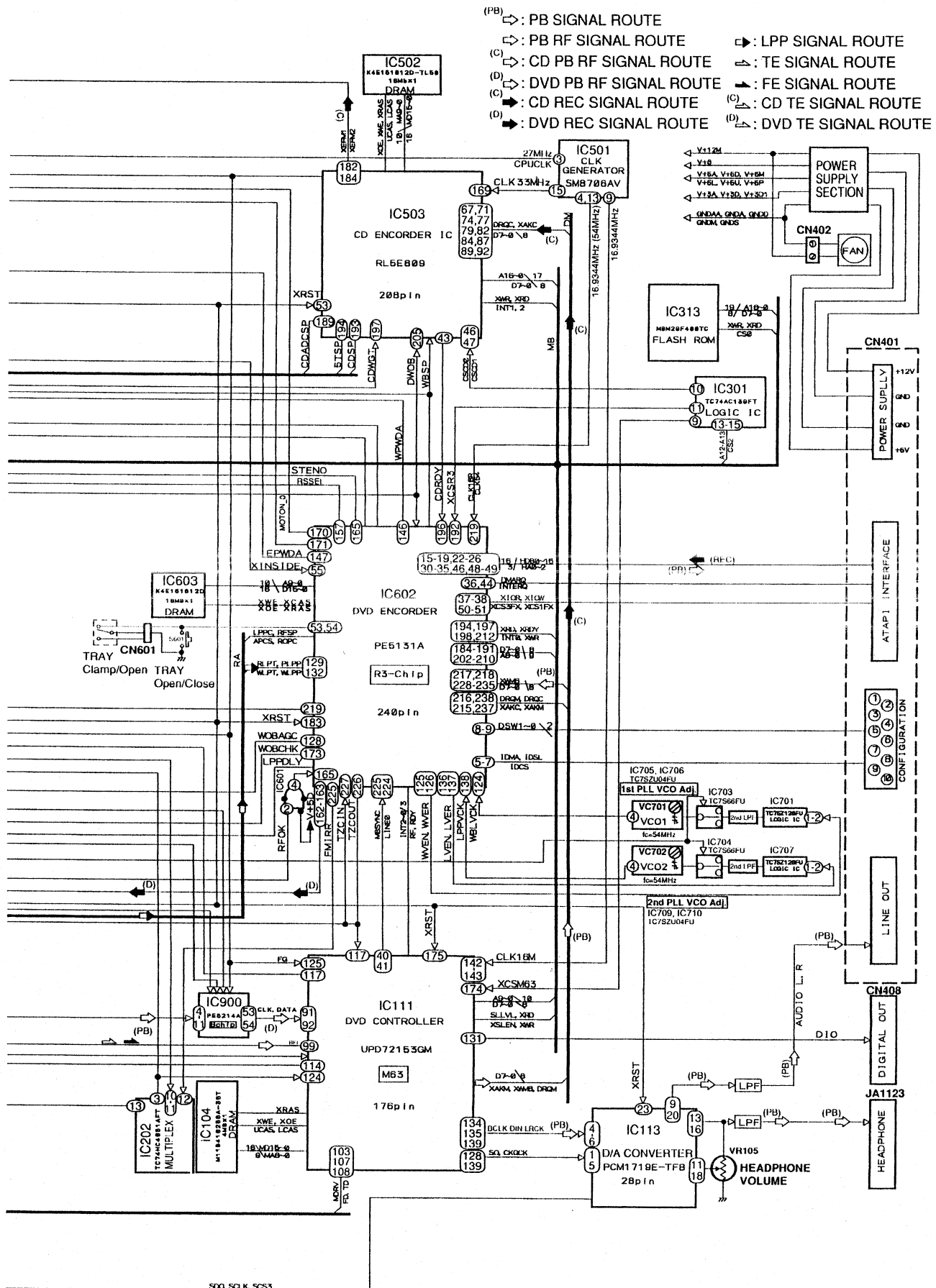
TRAVERSE MECHANISM ASSY-S

Traverse Mechanism Assy has no available service parts.

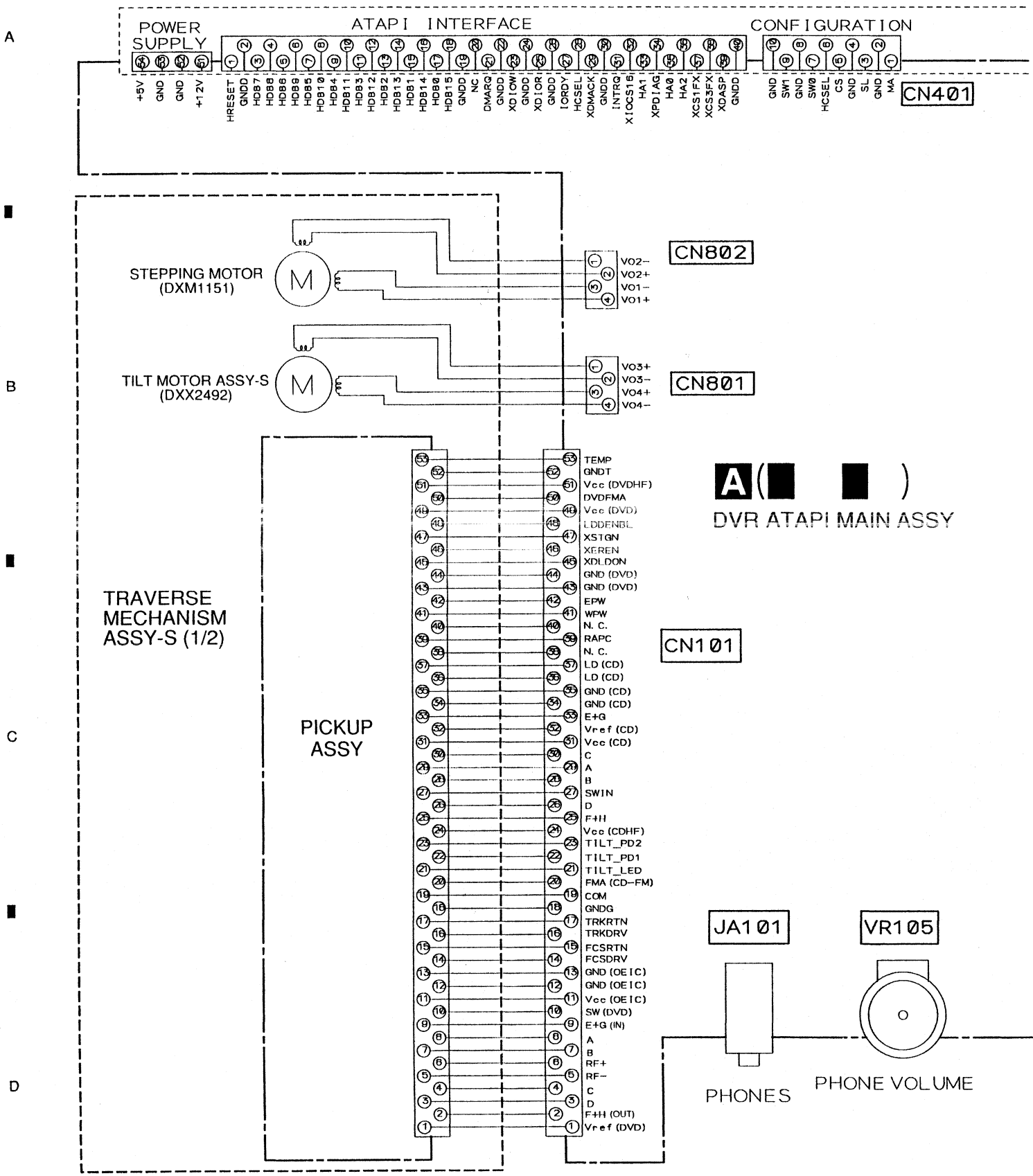
PCB PARTS LIST : DVR ATAPI MAIN ASSY

**DVR ATAPI MAIN ASSY has no available service parts except for
Semiconductors, IC408, IC409.
IC408, IC409 (1.8A / 50V) ICP-S1.8**

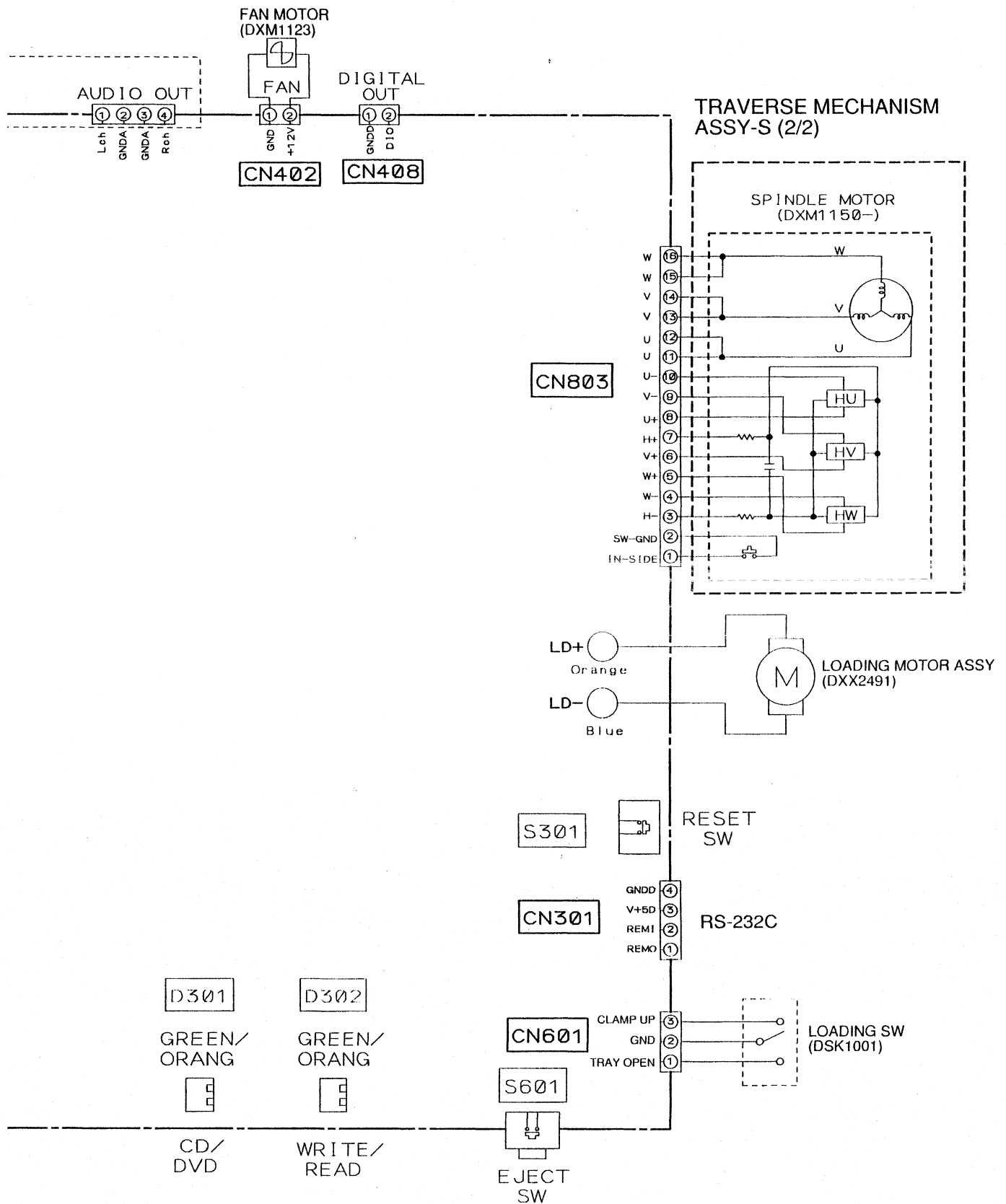




3.2 OVERALL WIRING DIAGRAM



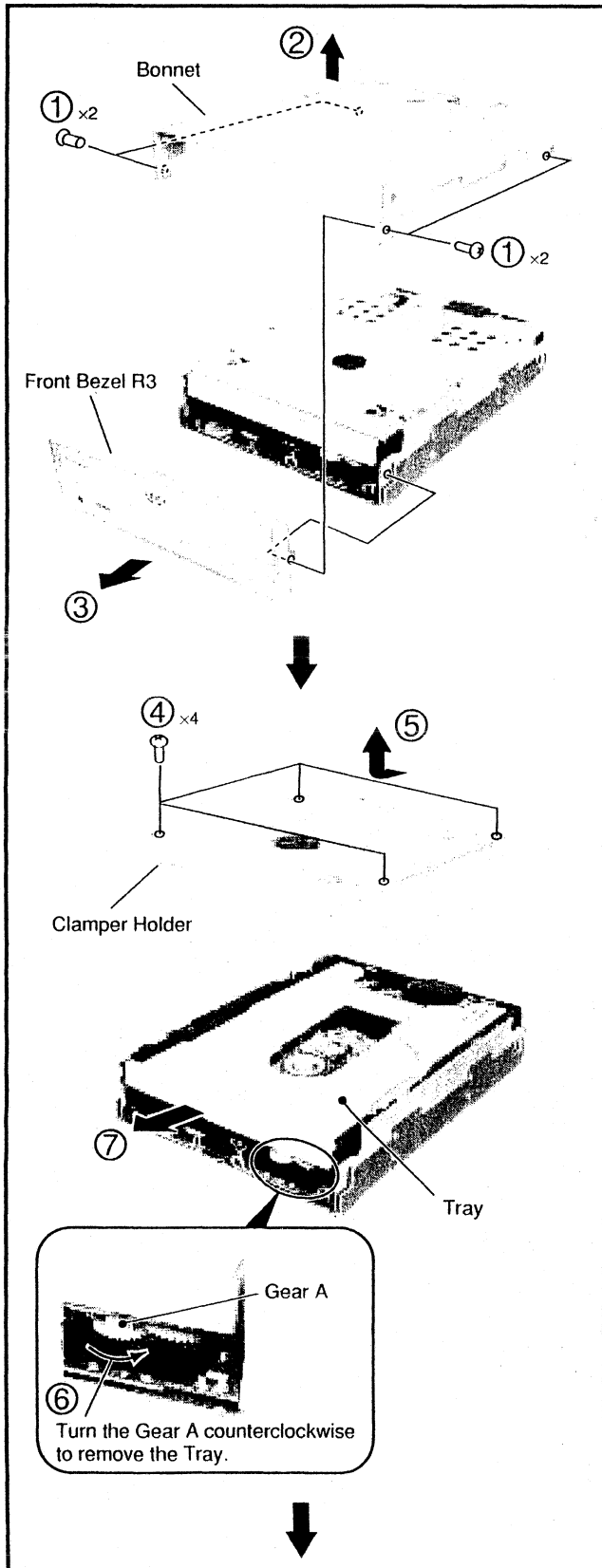
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



4. GENERAL INFORMATION

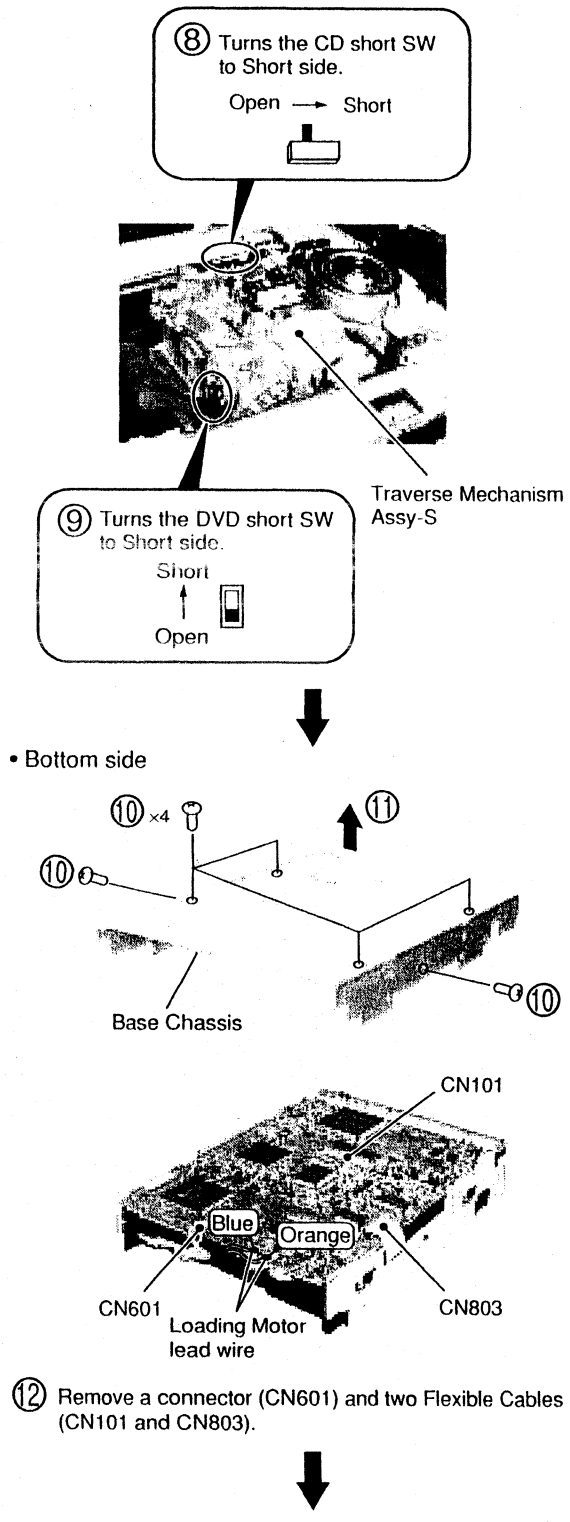
4.1 DIAGNOSIS

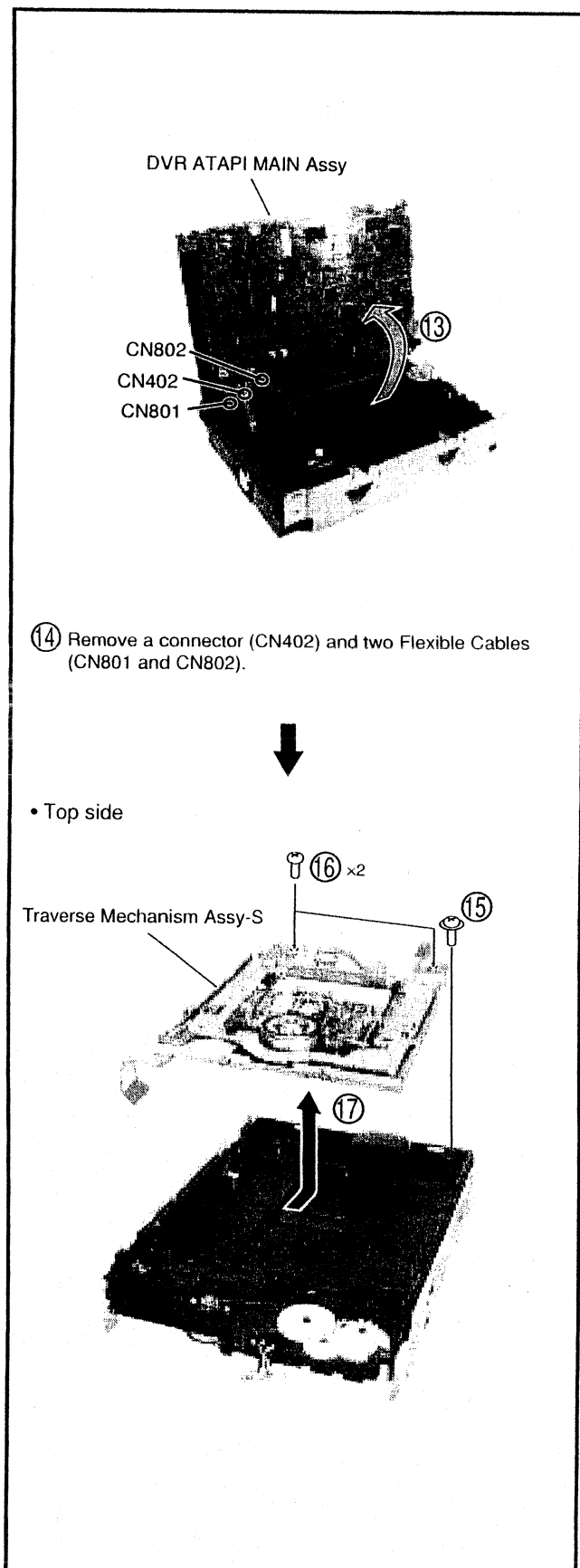
4.1.1 DISASSEMBLY



Caution:

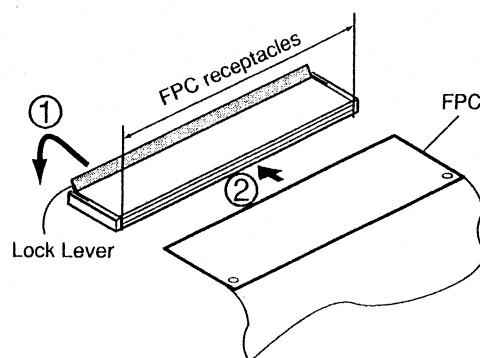
Be sure to turn the CD and DVD short switches to the Short side when you remove the flexible pickup cable.





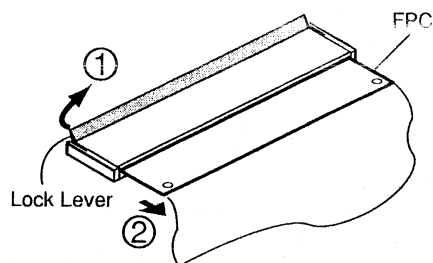
■ Connecting the Flexible Pickup Cable

1. Insert the FPC with the conductor side upward.
Properly insert it to the slot until it stops.
2. Push down both sides of the Lock Lever until they stop.
It cannot be locked with one side only.
Imperfection of pushing down may cause unlocking.



● Disconnecting the flexible pickup cable

1. Pull up the Lock Lever upward.
2. After unlocking, pull out the FPC.

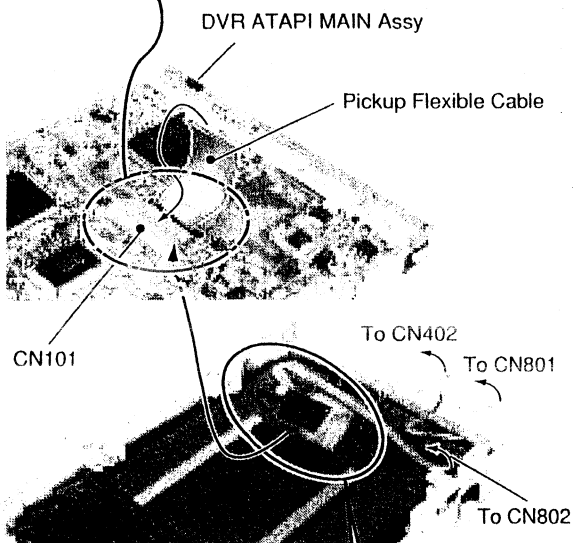
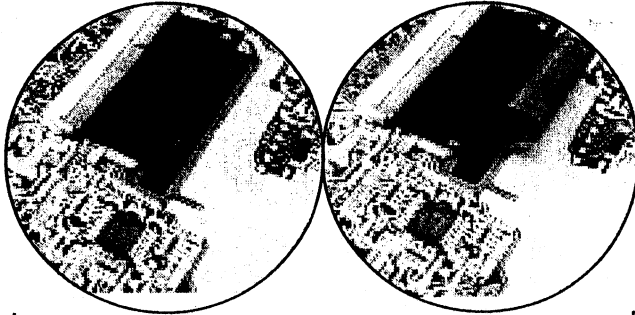


■ Styling the Flexible Cables

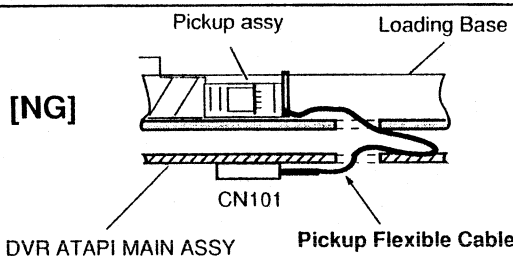
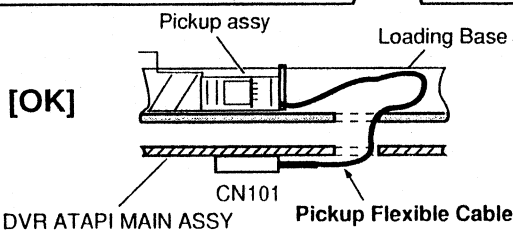
Perform styling of the Flexible Cables as shown in the figure below.

[OK]

[NG]

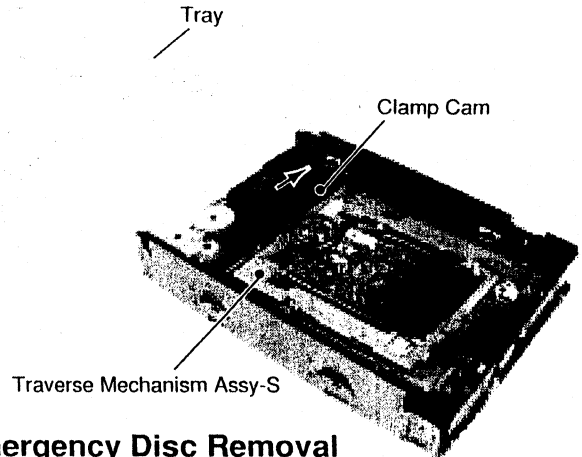


Cautions:
Be careful so that the Pickup flexible cable is not caught between the Loading base and PC Boards.



■ Caution When Installing the Tray

Confirm the position of Clamp Cam there is in the arrow direction.

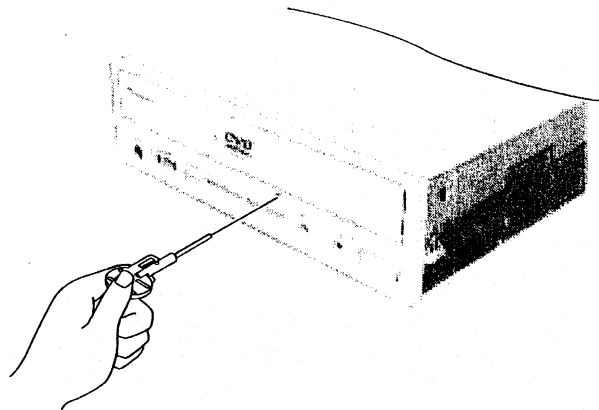


■ Emergency Disc Removal

In the following cases, discs can be ejected using the emergency ejection hole.

- Trouble with the device makes it impossible to remove the disc using the OPEN/CLOSE button or a software command.
- A disc that you need to eject remains inside the device but the power is off.

1. Confirm that the power for the device is OFF and that the disc has stopped spinning.
2. Insert the accompanying pin for emergency ejection straight into the emergency ejection hole and press firmly.



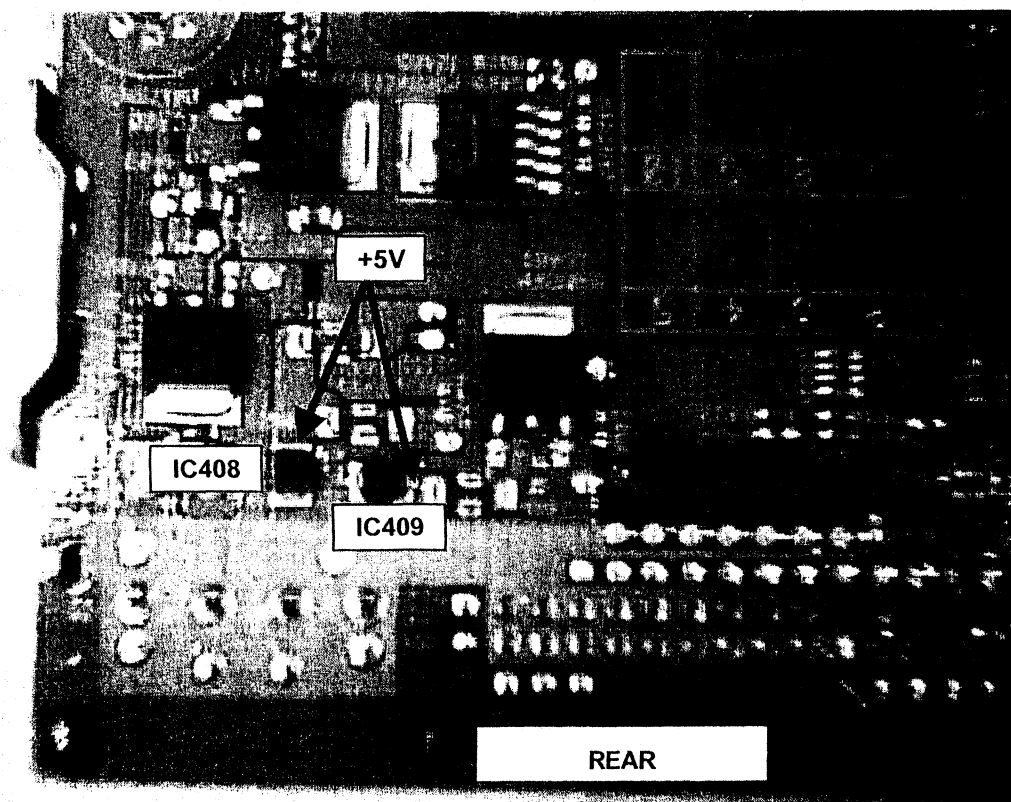
3. Pull it out as far as you need to and remove the disc. (The disc tray will open about 5 to 10 mm.)

Notes:

- Make sure to use only the accompanying pin for emergency ejection. (No other object should be inserted.)
- Never attempt to forcibly eject a disc that is still rotating, as doing so could result in injury personal or in damage to the disc.
- Do not place items within 12 cm of the front of this device, as doing so could obstruct the disc ejection operation.

4.1.2 NO POWER.

Confirm two IC-protectors IC708/IC709 on the DVR ATAPI MAIN ASSY are open circuited.



4.1.3 Readability and Write ability check.

● Tools required

- **PC :** PC/AT Compatible Machine
OS : WIN95 / WIN98 Real MSDOS mode.
CPU: Minimum requirement: Pentium 200MHz
Recommended: Pentium 466MHz Celeron or faster,
Chipset: Intel 440 series and 81x series..
UltraDMA mode supported or UltraDMA33/66 or higher supported.

■ Test Discs to be used :

Disc name	Description	Order NO	Contents
DVDT-001	Single layer DVD test disc	GGV1035	test signals, test video
DVDT-002	Dual layer DVD test disc	GGV1036	test signals, test video
CDT-313	CD-ROM (recorded till most outer track)	GGV1054	MOV files
CDM-G74S	CD-R for recording test	CDM-G74S	Blank
Richo CD-RW type 74/650	CD-RW for recording test	GGV1053	Blank
DVS-R470SDF	DVD-R (G) ver2.0 for test recording	GGV1049	Blank
DVS-RW47A	DVD-RW ver1.1 for test recording	GGV1050	Blank

DVR-A03

■ Test software to be used:

“ GGS1015 ” : DVR-A03 FA test program Ver 0.7 or later.

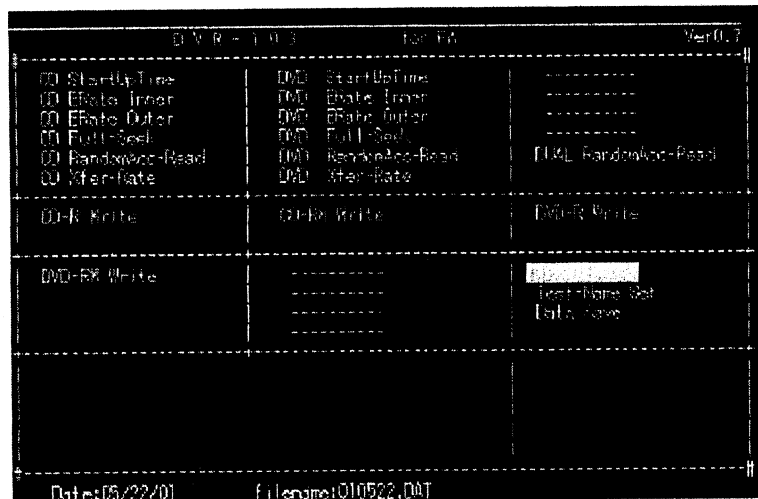
Program	----	R3a_n.exe	Executable program.
	----	R3a_n.spc	Spec data file
	----	r3fa.bat	Start up batch program.

■ Real MSDOS bootable FD example:

MSDOS.SYS	-- MSDOS system file
IO.SYS	-- MSDOS system file
Command.com	-- MSDOS system file
Atapi_cd.sys	-- Device driver for ATAPI DVD-ROM
MSCDEX.EXE	-- Allocating DVD-ROM directly.
Config.sys	--Boot up configuration file
	Description e.g. -
	Device=atapi_cd.sys /D:MSCD000
	LASTDRIVE=Z
	FILES=30
	STACKS=9,256
Autoexec.Bat	--Auto executing batch file
	Description e.g. -
	MSCDEX.EXE/D:MSCD000

● Procedure

- 1 Set DVR-A03 to master mode. (short pin 1 to set the unit to Master mode)
- 2 Connect Power supply cable then connect DVR-A03 as secondary master to PC by IDE cable.
Use separate Power supply for testing unit, in order to avoid booting up the PC every time.
- 3 Power on the unit and the PC then boot up **real MSDOS mode** using boot up FD or equivalent.
- 4 Make sure DVR-A03 is recognized.
- 5 Type in **R3fa** then press [ENTER] to start up the failure analyzing program.
- 6 Following screen will appear.

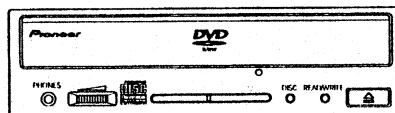


Use cursor keys to select test item and press enter to execute.
Press escape to quit the program

- 7 Checking status and recognition of the unit.
 - a) Select [Inquiry] and press [Enter].
 - b) Confirm the model name, Serial number and firmware version.

Service Manual

Pioneer



ORDER NO.
PRT-060

DVD-R/RW CD-R/RW WRITER

DVR-A03

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

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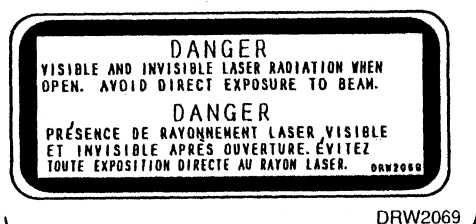
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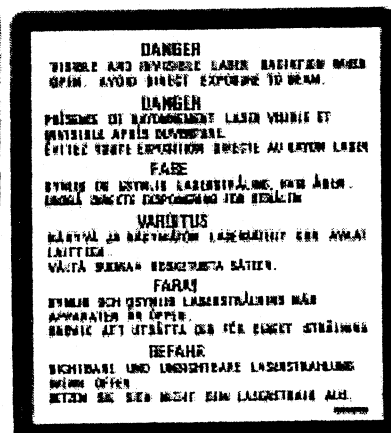
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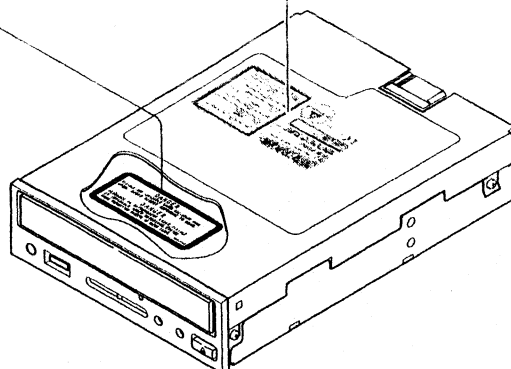
THIS CLASS B SPECIAL APPARATUS COMPLIES WITH CANADIAN CES-411.
CET APPAREIL RADIOMIQUE DE LA CLASSE B EST CONFORME À LA NORME CAN. CES-411.

CERTIFICATION THIS PRODUCT COMPLIES WITH CANIS RULES 2, CITE, SUBCHAPTER 1, PART 1001 AT DATE OF MANUFACTURE.

CLASS 1 LASER PRODUCT
LASER KLASSE 1



DRW2020



Additional Laser Caution

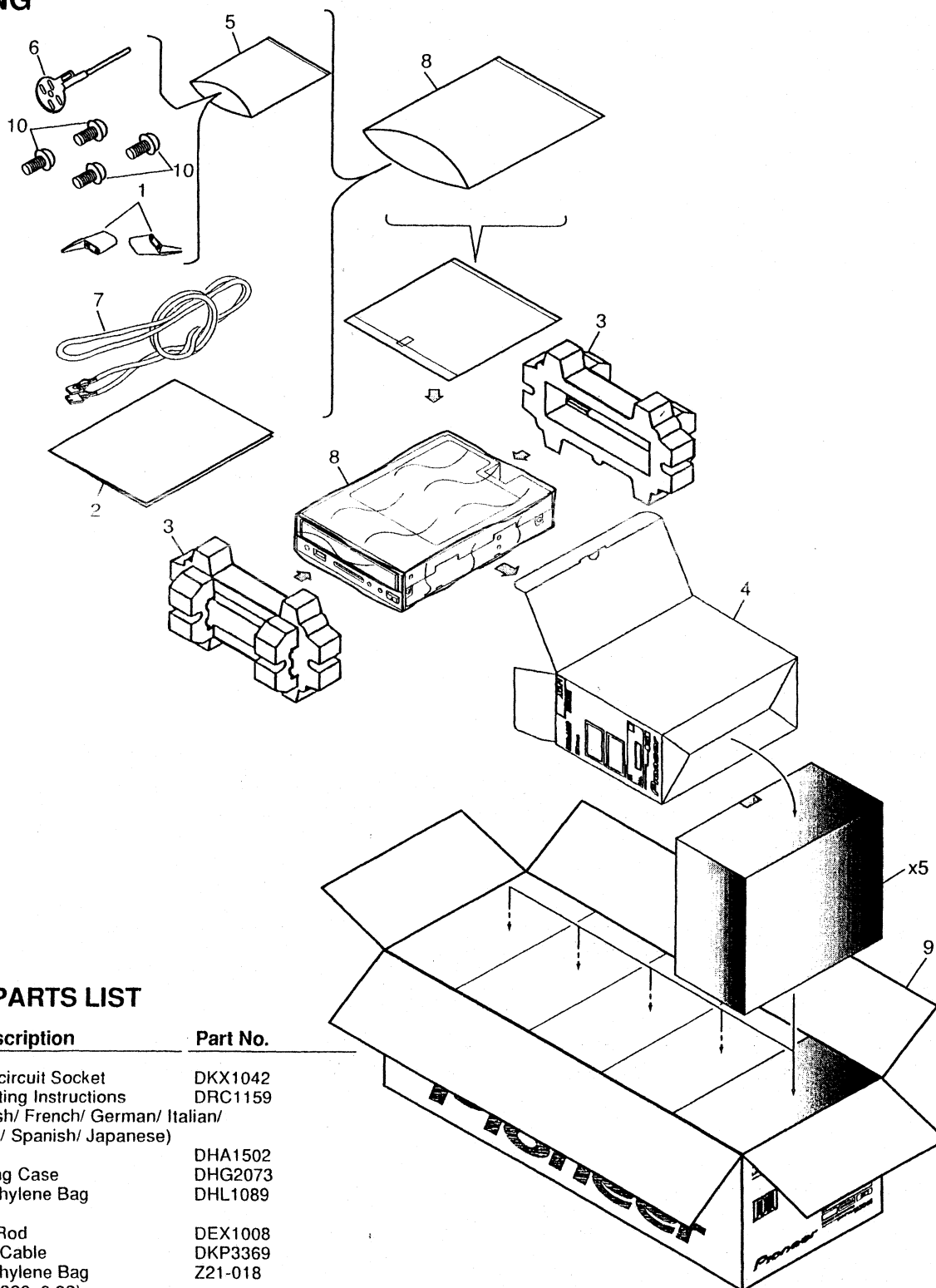
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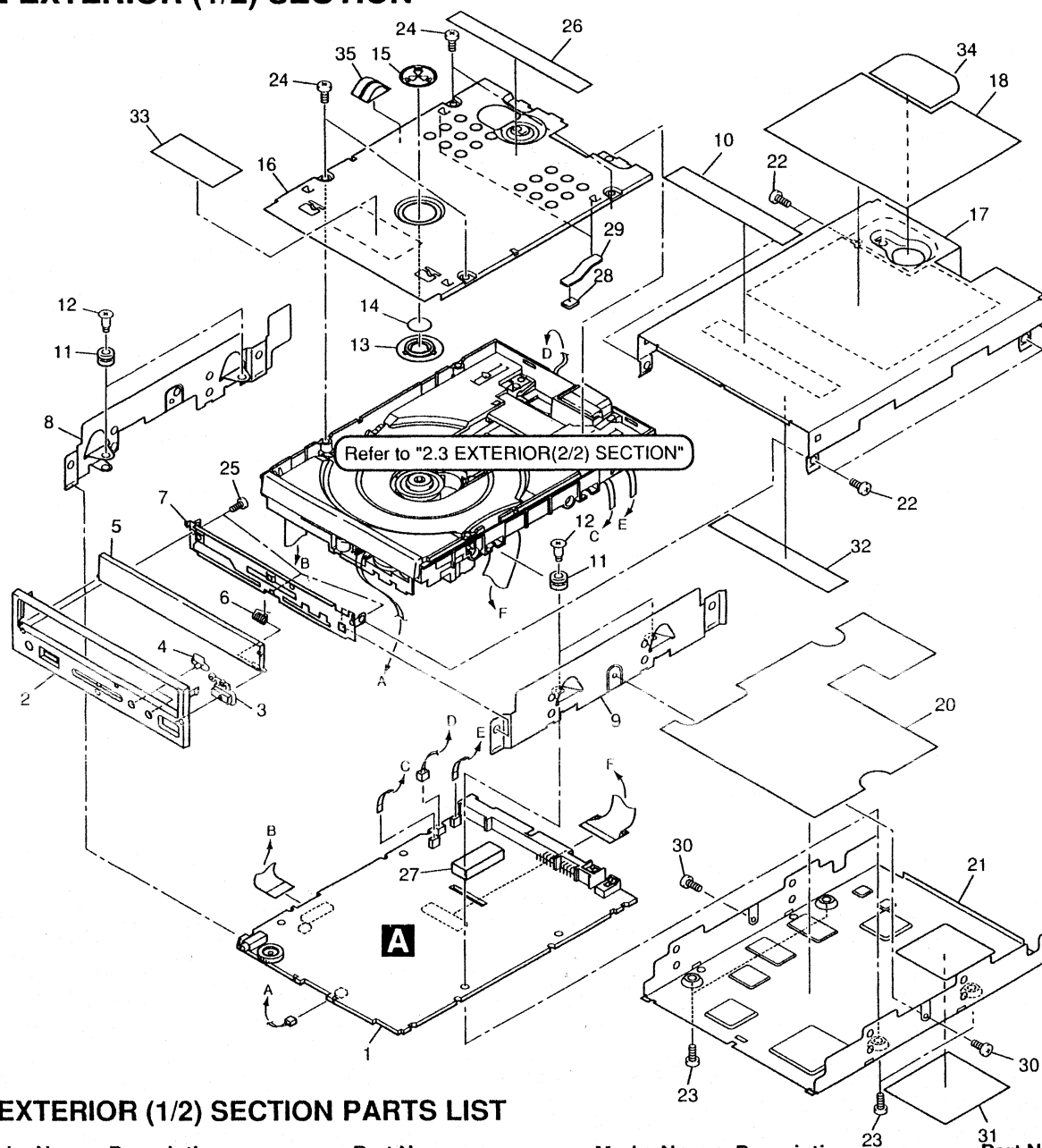
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NSP	7	Audio Cable	DKP3369
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	9	Master Carton (A03)	DHG2149
	10	Mounting Screw	AMZ30P060FMC

2.2 EXTERIOR (1/2) SECTION

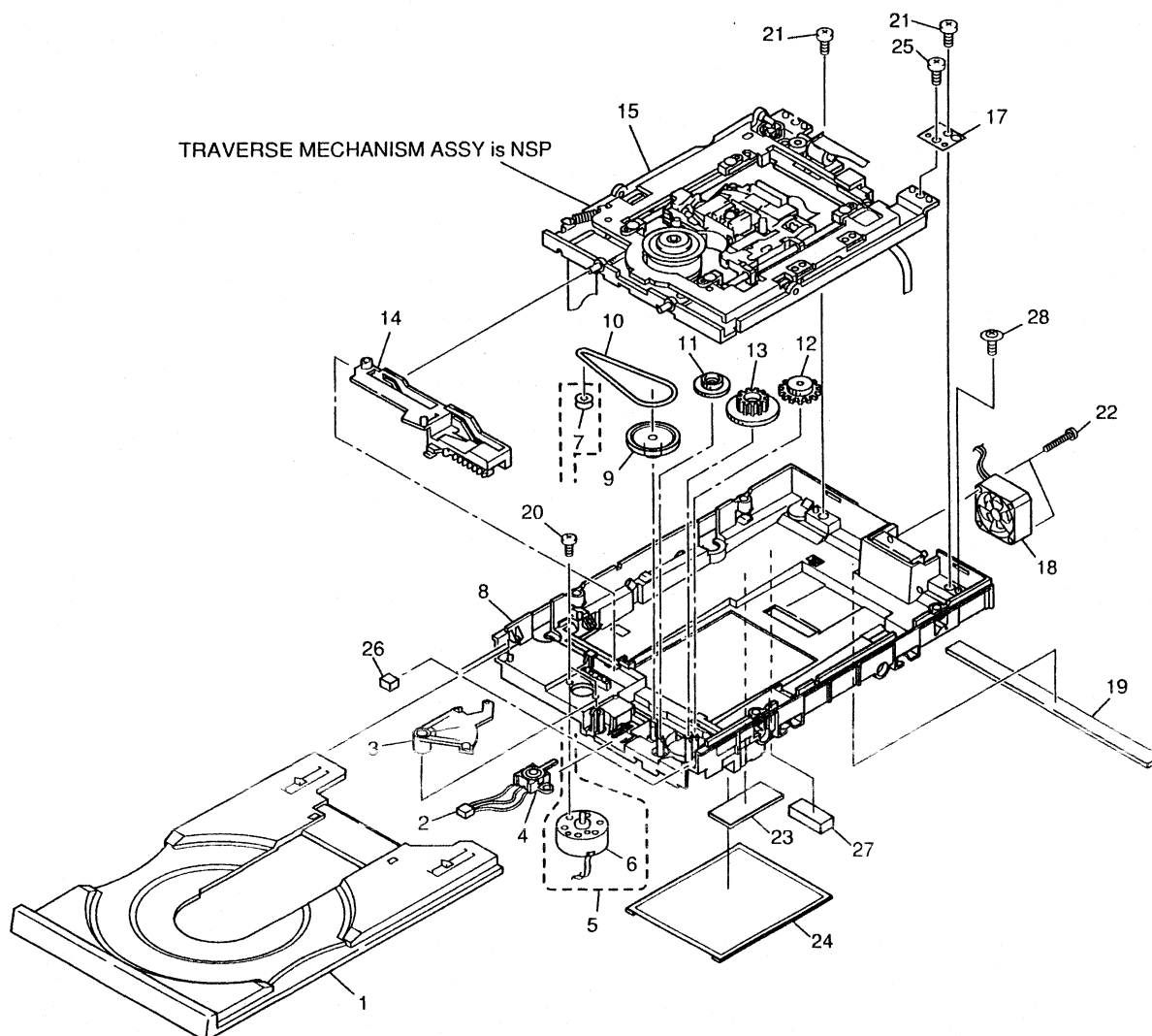


● EXTERIOR (1/2) SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	DVR ATAPI MAIN Assy	-----
	2	Front Bezel R3	DAH1977
	3	Function Button R3	DAC1966
	4	Lens	DAC1855
	5	Front Door R3Z	DAH2016
	6	Door Spring	DBH1477
	7	Shield Plate	DNE1398
	8	Frame L	DNB1084
	9	Frame R	DNB1085
NSP	10	Label	-----
	11	Floating Rubber	DEB1466
	12	Float Screw	DBA1148
	13	Clamper	DNK3829
	14	Clamper Yoke	DNH2467
	15	Upper Clamper	DNK3830
	16	Clamper Holder	DNC1548
NSP	17	Bonnet	-----

Mark	No.	Description	Part No.
NSP	18	Model Label	-----
	19		-----
	20	Sheet	DEB1473
	21	Base Chassis	DNC1549
	22	Screw	BMZ26P050FMC
	23	Screw	PMA26P040FMC
	24	Screw	BPZ26P060FZK
	25	Screw	DBA1154
	26	Air Packing	DEB1474
	27	Air Cushion	DEB1488
	28	Spacer	DEB1483
	29	Plate	DNK3839
	30	Screw	DBA1159
	31	Label	DRW2053
	32	65 Label	ARW7050
	33	Caution Label	DRW2069
	34	Sheet	DEC2421
	35	Stick Finger	DNB1092

2.3 EXTERIOR (2/2) SECTION



● EXTERIOR (2/2) SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Tray	DNK3812	16	•••••		
	2	Connector Assy (3P)	DKP3544	17	Plate	DBK1208	
	3	Eject Lever	DNK3817	18	Fan Motor (25mm)	DXM1123	
	4	S Lever Switch	DSK1001	19	Packing	DEB1474	
	5	Loading Motor Assy	DXX2491	20	Screw	JGZ17P030FMC	
NSP	6	Carriage Motor	-----	21	Screw	BPZ26P060FZK	
NSP	7	Motor Pulley	-----	22	Screw (2.6×16)	DBA1153	
NSP	8	Loading Base	-----	23	Air Cushion	DEB1488	
	9	Gear Pulley	DNK3813	24	Sheet (Rubber)	DEC2411	
	10	Rubber Belt	DEB1465	25	Screw	BMZ26P060FMC	
	11	Gear A	DNK3814	26	Spacer POR (T5)	DEB1485	
	12	Gear C	DNK3816	27	Spacer	DEB1482	
	13	Gear B	DNK3815	28	Screw	VBA1034	
NSP	14	Clamp Cam	-----				
NSP	15	Traverse Mechanism Assy-S	-----				

2.4 OTHER SECTION

TRAVERSE MECHANISM ASSY-S

Traverse Mechanism Assy has no available service parts.

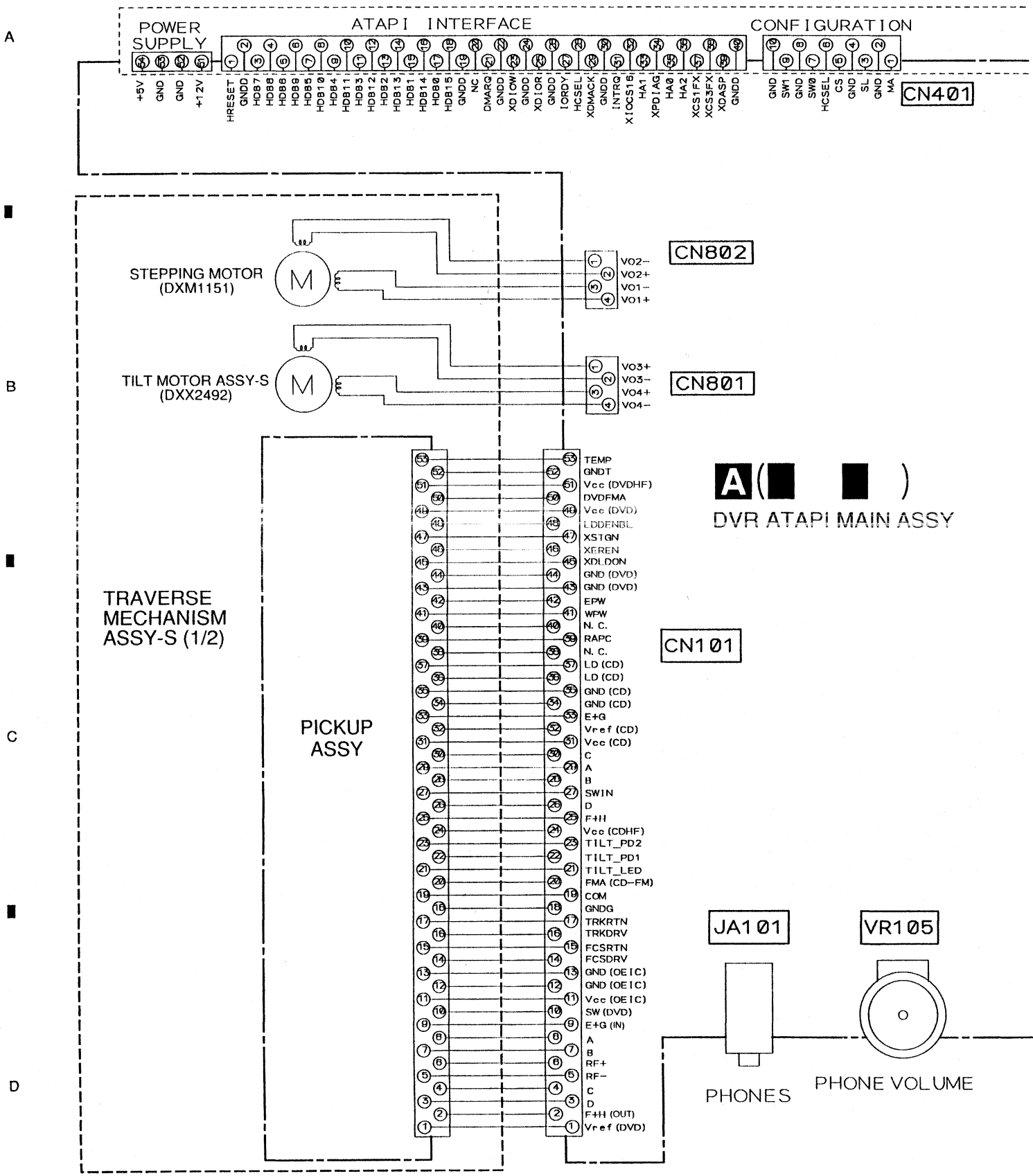
PCB PARTS LIST : DVR ATAPI MAIN ASSY

**DVR ATAPI MAIN ASSY has no available service parts except for
Semiconductors, IC408, IC409.
IC408, IC409 (1.8A / 50V) ICP-S1.8**

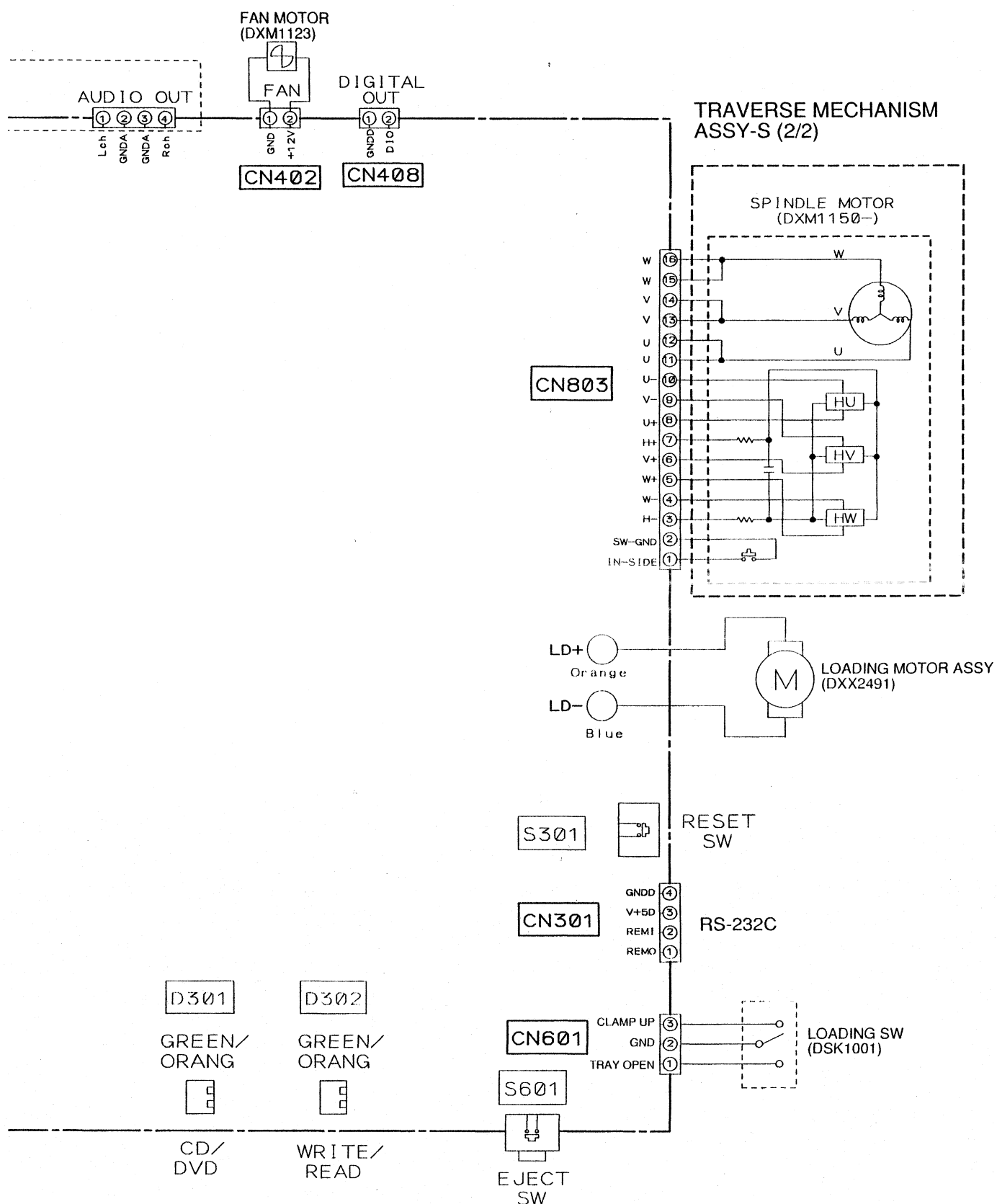




3.2 OVERALL WIRING DIAGRAM



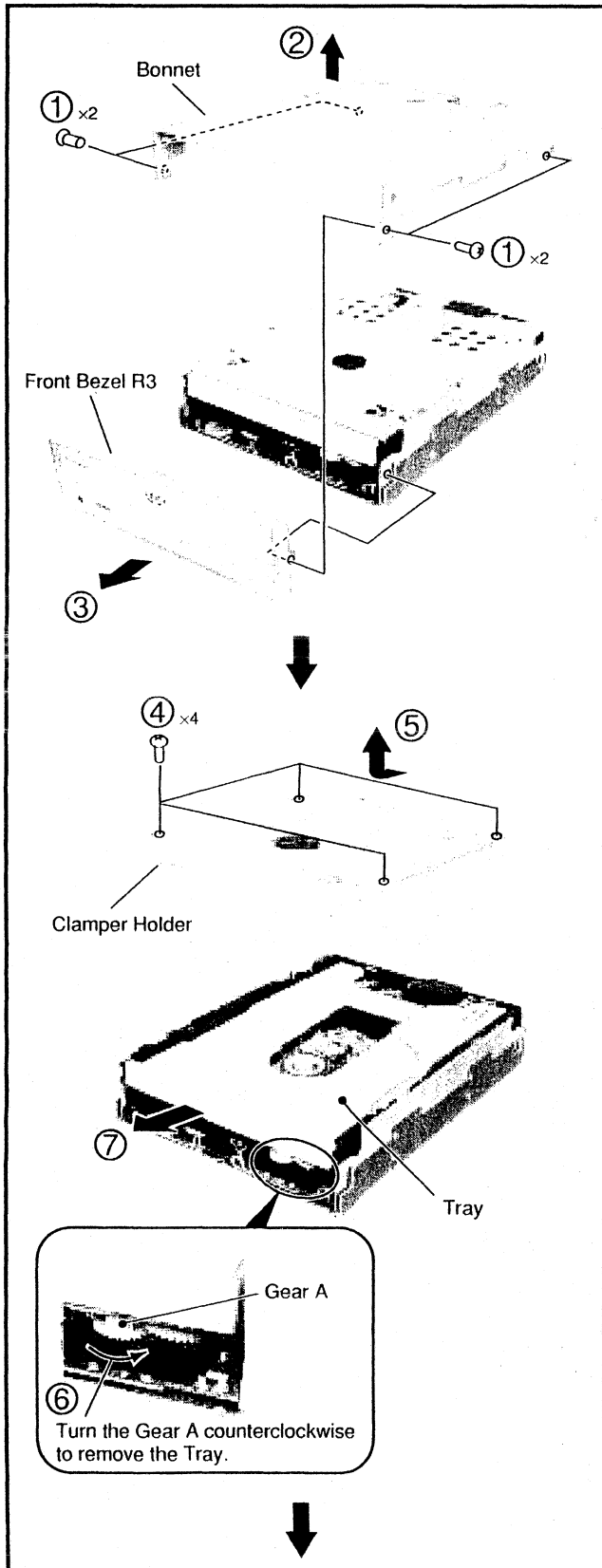
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



4. GENERAL INFORMATION

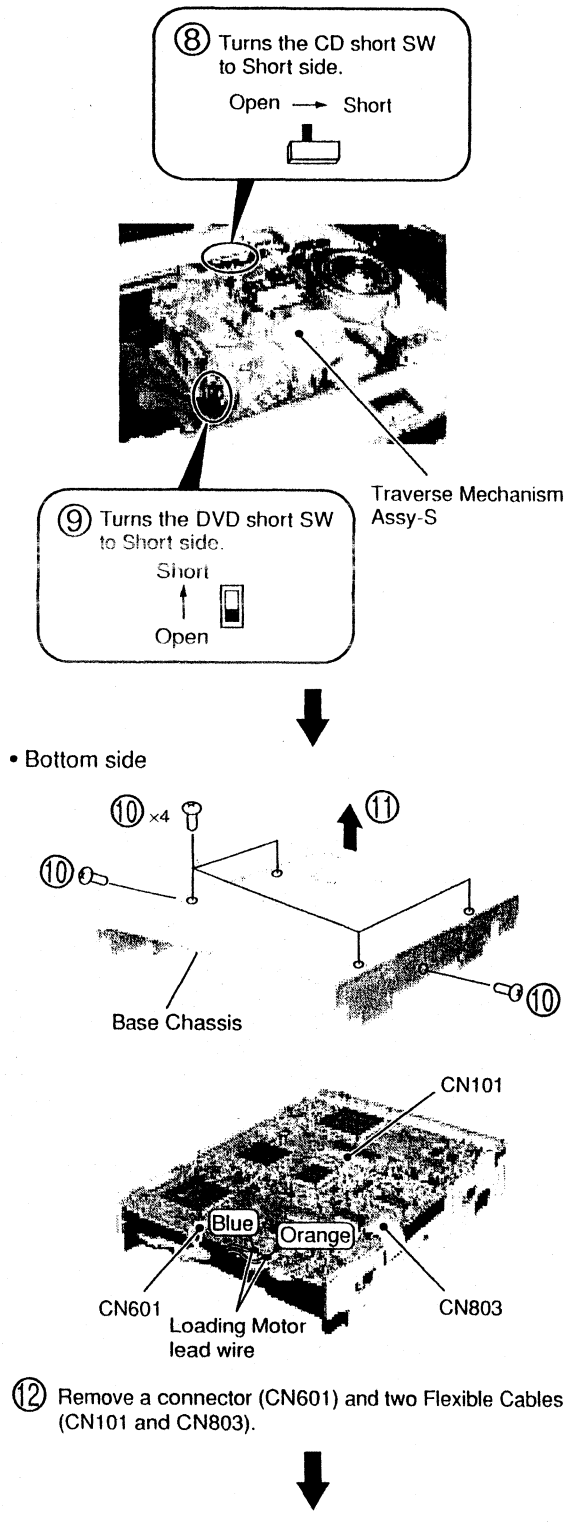
4.1 DIAGNOSIS

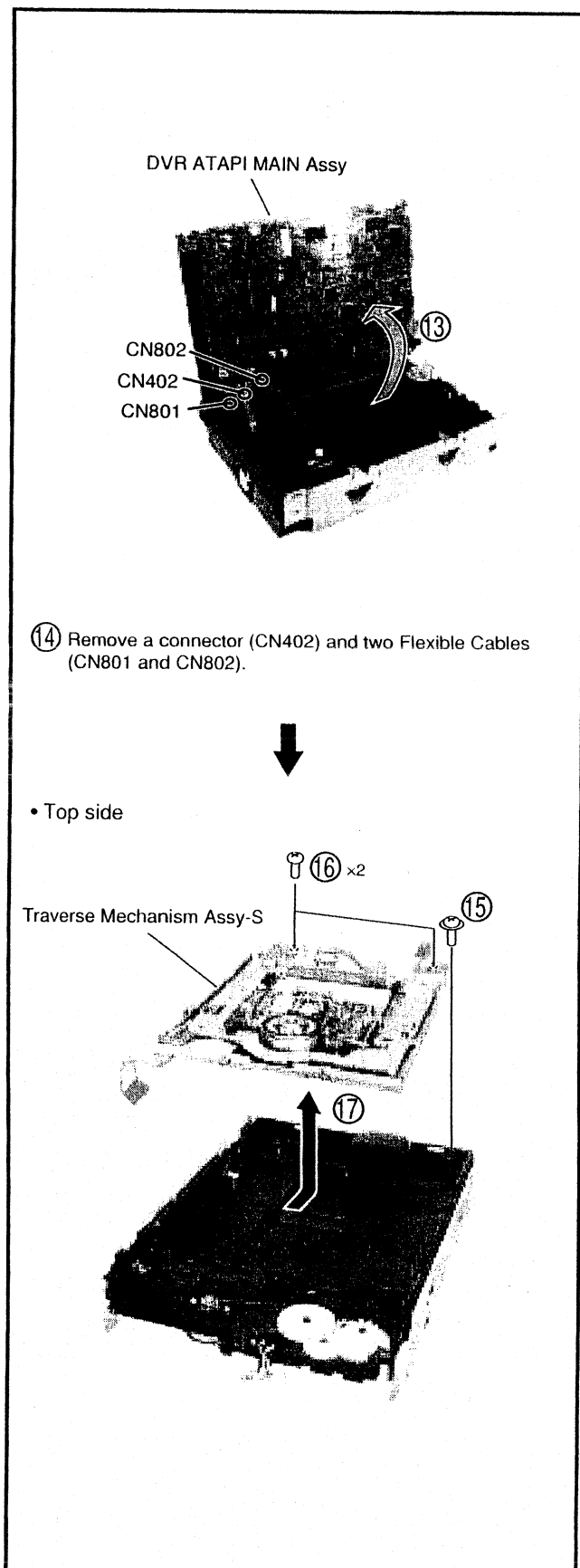
4.1.1 DISASSEMBLY



Caution:

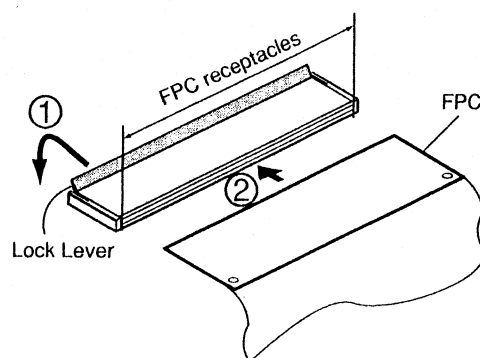
Be sure to turn the CD and DVD short switches to the Short side when you remove the flexible pickup cable.





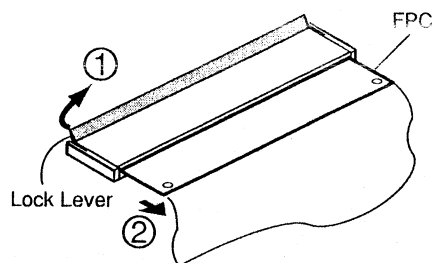
■ Connecting the Flexible Pickup Cable

1. Insert the FPC with the conductor side upward.
Properly insert it to the slot until it stops.
2. Push down both sides of the Lock Lever until they stop.
It cannot be locked with one side only.
Imperfection of pushing down may cause unlocking.



● Disconnecting the flexible pickup cable

1. Pull up the Lock Lever upward.
2. After unlocking, pull out the FPC.

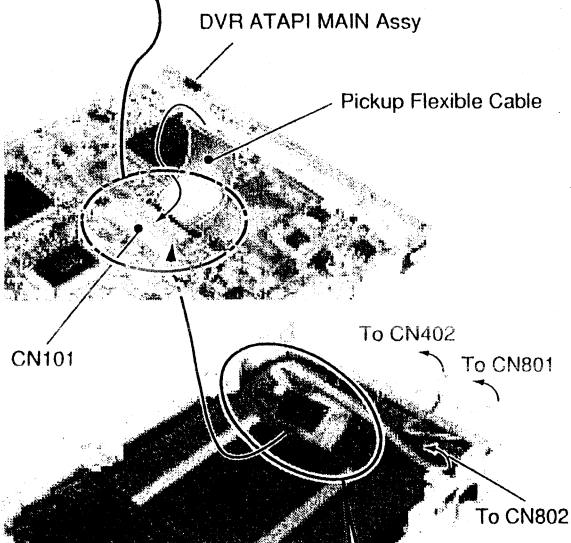
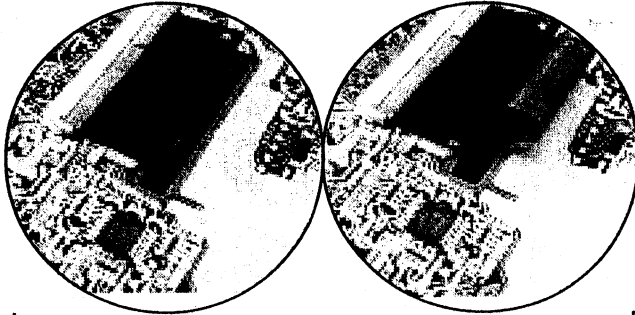


■ Styling the Flexible Cables

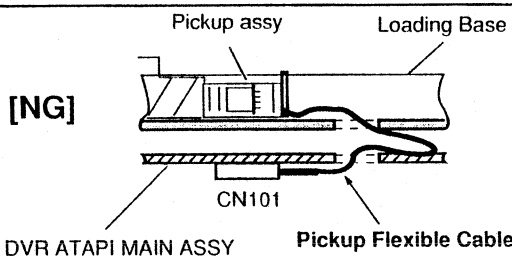
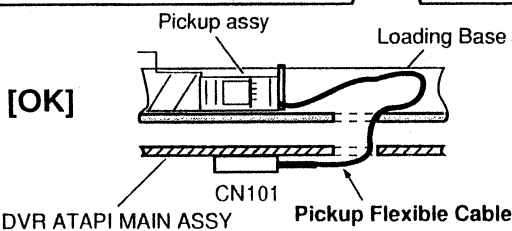
Perform styling of the Flexible Cables as shown in the figure below.

[OK]

[NG]

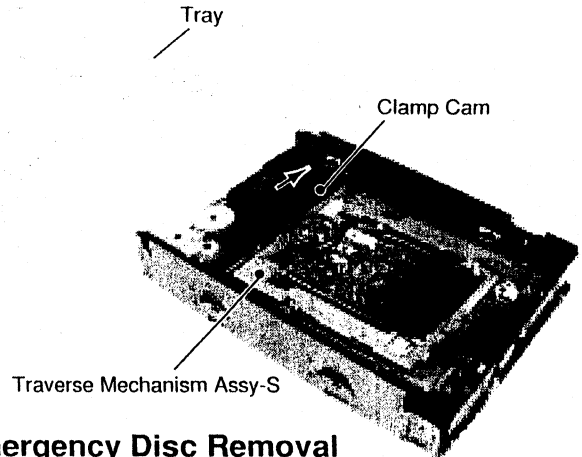


Cautions:
Be careful so that the Pickup flexible cable is not caught between the Loading base and PC Boards.



■ Caution When Installing the Tray

Confirm the position of Clamp Cam there is in the arrow direction.

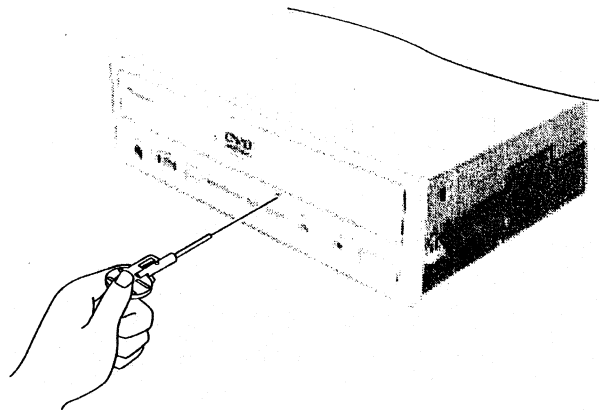


■ Emergency Disc Removal

In the following cases, discs can be ejected using the emergency ejection hole.

- Trouble with the device makes it impossible to remove the disc using the OPEN/CLOSE button or a software command.
- A disc that you need to eject remains inside the device but the power is off.

1. Confirm that the power for the device is OFF and that the disc has stopped spinning.
2. Insert the accompanying pin for emergency ejection straight into the emergency ejection hole and press firmly.



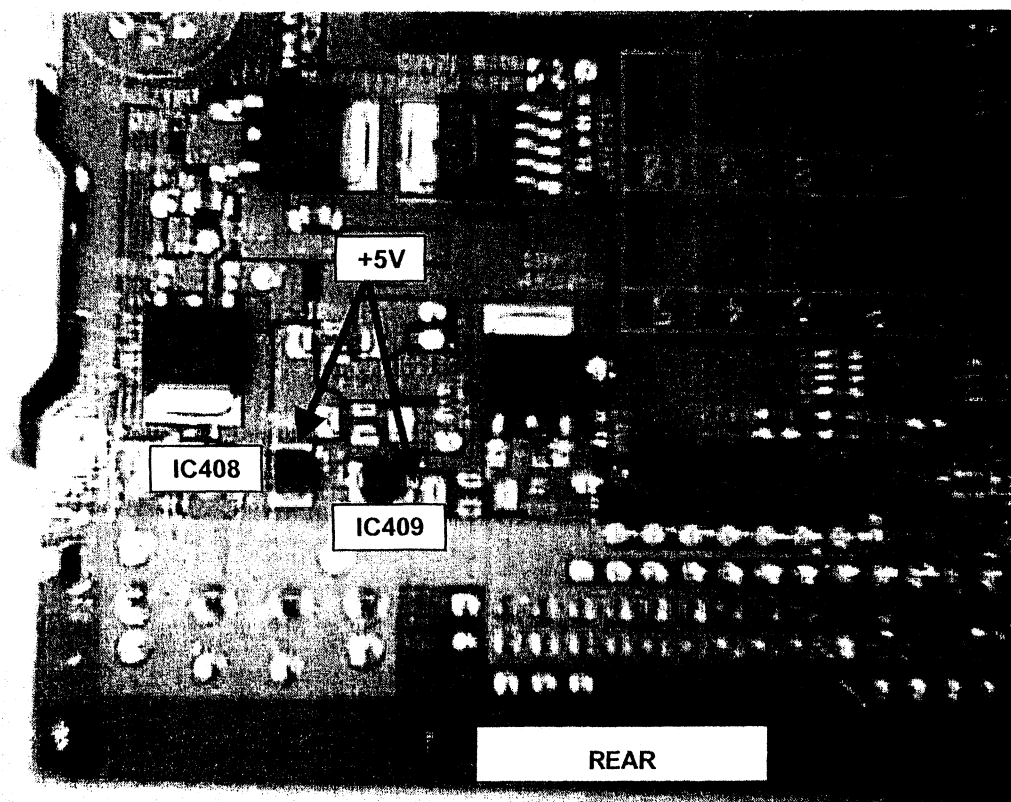
3. Pull it out as far as you need to and remove the disc. (The disc tray will open about 5 to 10 mm.)

Notes:

- Make sure to use only the accompanying pin for emergency ejection. (No other object should be inserted.)
- Never attempt to forcibly eject a disc that is still rotating, as doing so could result in injury personal or in damage to the disc.
- Do not place items within 12 cm of the front of this device, as doing so could obstruct the disc ejection operation.

4.1.2 NO POWER.

Confirm two IC-protectors IC708/IC709 on the DVR ATAPI MAIN ASSY are open circuited.



4.1.3 Readability and Write ability check.

● Tools required

- **PC :** PC/AT Compatible Machine
OS : WIN95 / WIN98 Real MSDOS mode.
CPU: Minimum requirement: Pentium 200MHz
Recommended: Pentium 466MHz Celeron or faster,
Chipset: Intel 440 series and 81x series..
UltraDMA mode supported or UltraDMA33/66 or higher supported.

■ Test Discs to be used :

Disc name	Description	Order NO	Contents
DVDT-001	Single layer DVD test disc	GGV1035	test signals, test video
DVDT-002	Dual layer DVD test disc	GGV1036	test signals, test video
CDT-313	CD-ROM (recorded till most outer track)	GGV1054	MOV files
CDM-G74S	CD-R for recording test	CDM-G74S	Blank
Richo CD-RW type 74/650	CD-RW for recording test	GGV1053	Blank
DVS-R470SDF	DVD-R (G) ver2.0 for test recording	GGV1049	Blank
DVS-RW47A	DVD-RW ver1.1 for test recording	GGV1050	Blank

DVR-A03

■ Test software to be used:

“ GGS1015 ” : DVR-A03 FA test program Ver 0.7 or later.

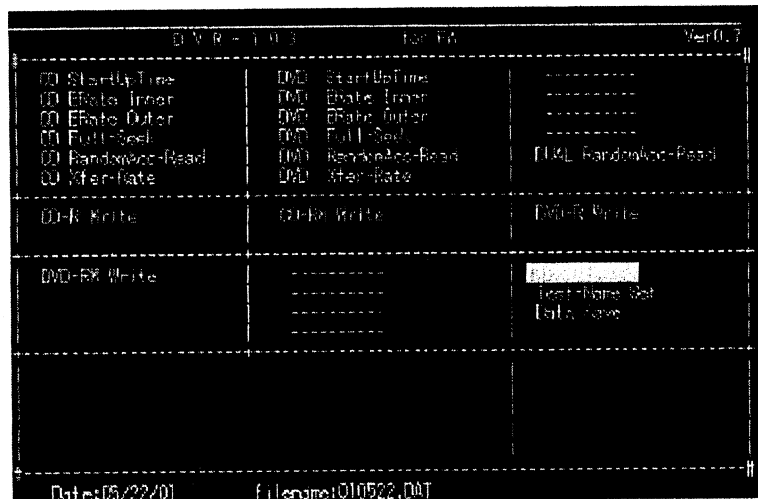
Program	----	R3a_n.exe	Executable program.
	----	R3a_n.spc	Spec data file
	----	r3fa.bat	Start up batch program.

■ Real MSDOS bootable FD example:

MSDOS.SYS	-- MSDOS system file
IO.SYS	-- MSDOS system file
Command.com	-- MSDOS system file
Atapi_cd.sys	-- Device driver for ATAPI DVD-ROM
MSCDEX.EXE	-- Allocating DVD-ROM directly.
Config.sys	--Boot up configuration file
	Description e.g. -
	Device=atapi_cd.sys /D:MSCD000
	LASTDRIVE=Z
	FILES=30
	STACKS=9,256
Autoexec.Bat	--Auto executing batch file
	Description e.g. -
	MSCDEX.EXE/D:MSCD000

● Procedure

- 1 Set DVR-A03 to master mode. (short pin 1 to set the unit to Master mode)
- 2 Connect Power supply cable then connect DVR-A03 as secondary master to PC by IDE cable.
Use separate Power supply for testing unit, in order to avoid booting up the PC every time.
- 3 Power on the unit and the PC then boot up **real MSDOS mode** using boot up FD or equivalent.
- 4 Make sure DVR-A03 is recognized.
- 5 Type in **R3fa** then press [ENTER] to start up the failure analyzing program.
- 6 Following screen will appear.



Use cursor keys to select test item and press enter to execute.
Press escape to quit the program

- 7 Checking status and recognition of the unit.
 - a) Select [Inquiry] and press [Enter].
 - b) Confirm the model name, Serial number and firmware version.

8	Checking CD-ROM Readability. a) Select [CD StartUp Time] and press [Enter]. Disc tray will open. b) Set GGV1054 (CDT-313) and press tray open/close button on the unit. c) Start up time is measured and displayed automatically. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Next, select [CD Erate Inner] and press [Enter] and confirm that the measurement is within the SPEC. f) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. *1 g) Confirm [CD Erate Outer], [CD Full Seek], [CD Random Acc-Read], [CD Xfer rate] in the same way.
9	Checking DVD-ROM (Single layer) Readability. a) Select [DVD StartUp Time] and press [Enter]. Disc tray will open. b) Set GGV1035 (DVDT-001) and press tray open/close button on the unit. c) Start up time is measured and displayed automatically. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Next, select [DVD Erate Inner] and press [Enter] right bottom corner. *1 g) Confirm [DVD Erate Outer], [DVD Full Seek], [DVD Random Acc-Read], [DVD Xfer rate] in the same way.
10	Checking DVD-ROM (Double layer) Readability. a) Press tray open/close button to open the tray and set GGV1036 (DVDT-002). b) Press Tray open/close button on the unit and close the tray. c) Select [DVD Random Acc-Read] and press [Enter] and confirm that the measurement is within the SPEC. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Remove the disc.
11	Checking CD-R Write ability and Readability. a) Press tray open/close button to open the tray and set CDM-G74S (CDM-G74S). *2 b) Press Tray open/close button on the unit and close the tray. c) Select [CD-R WRITE] and press [Enter] and confirm that the writing is done correctly and error rate measurement is within the SPEC. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Remove the disc.
12	Checking CD-RW Write ability and Readability. (Pre-formatting is necessary for the new disc) a) Press tray open/close button to open the tray and set GGV1053 (Richo type 74/650) *3 b) Press Tray open/close button on the unit and close the tray. c) Select [CD-RW WRITE] and press [Enter] and confirm that the writing is done correctly and error rate measurement is within the SPEC. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Remove the disc.

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13	Checking DVD-R Write ability and Readability.
*2	a) Press tray open/close button to open the tray and set GGV1049 (DVS-R470SDF). b) Press Tray open/close button on the unit and close the tray. c) Select [DVD-R WRITE] and press [Enter] and confirm that the writing is done correctly and error rate measurement is within the SPEC. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Remove the disc.
14	Checking DVD-RW Write ability and Readability.
*3	a) Press tray open/close button to open the tray and set GGV1050 (DVS-RW47A) b) Press Tray open/close button on the unit and close the tray. c) Select [DVD-RW WRITE] and press [Enter] and confirm that the writing is done correctly and error rate measurement is within the SPEC. d) When the measurement is within the SPEC. [OK] will be displayed at the right bottom corner. e) Remove the disc.
15	Saving the measurement data.
	a) Select [Data save] and press [Enter] . b) Set a Floppy disc on the FDD. b) Program will allow you to save the data on the floppy disc with current date as its file name.
16	a) Turn off power supply of DVR-A03. b) Disconnect the IDE Cable. c) Disconnect the Power supply cable.

■ Notes:

*1: Transfer rate may not appear correctly when IDE is not operating in Ultra DMA mode.

*2: CD-R & DVD-R discs can be used several times. Remaining number of times writing test can be performed is displayed on the screen when test write is performed.

With new CDM-G74S (CD-R) approx. 100 times, with new GGV1049 (DVD-R)

approx. 300 times writing test can be performed.

Display on the screen.

" Now writing"

" Start_lba = xxxh Remain_times XX"

*3: When performing CD-RW writing test with a new GGV1053 (CD-RW), pre-formatting is necessary before using the disc.

Formatting of CD-RW and DVD-RW can be done in the following way.

- **Short pin1, pin2, pin4 at the device configure jumper.**
- **Turn on the power and insert CD-RW or DVD-RW.**
- **Formatting will start automatically.**
- **When writing LED is turned off, pre-formatting is finished. Disc is ejected automatically.**

Required time for CD-R pre-formatting is approx 20min.

For new GGV1050 (DVD-RW), disc is automatically pre-format when disc is inserted and DVD-RW test write is Performed.

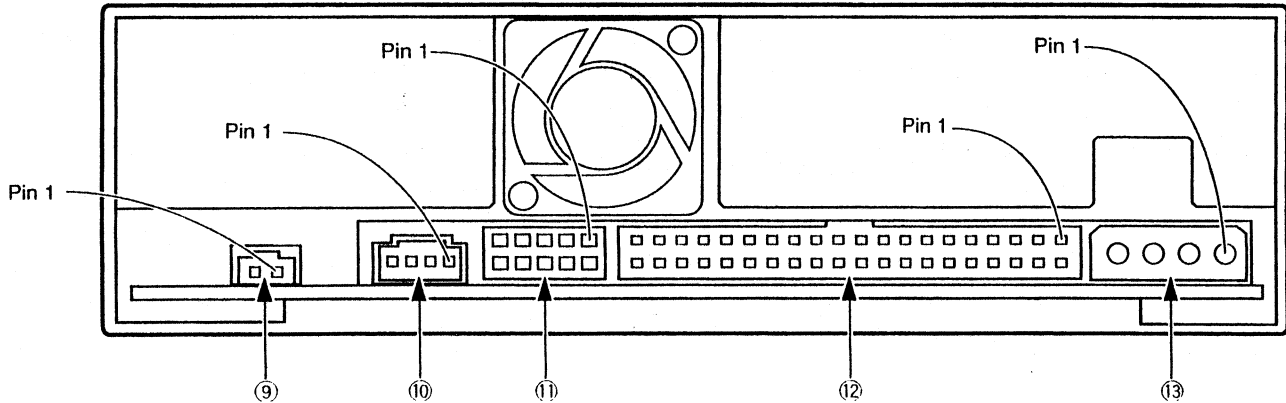
Formatting is also necessary when all writing area is finished or when disc become unrecognized.

Others : Use always clean discs to be sure that the failure is not caused by the disc.

■ Minimum SPEC reference:

CD StartUp time	20.0 sec	CD Full Seek time	600 ms
CD Inner-side Error Rate	0.0033	CD Random Access Read(1block) time	450 ms
CD Outer-side Error Rate	0.0033	CD Transfer-Rate	3310 kbytes/s
CD Stop Time	10.0 s		
DVD StartUp time	20.0 s	DVD Inner-side Error Rate	0.0033
DVD Outer-side Error Rate	0.0033	DVD Full Seek time	650 ms
DVD Random Access Read(1block) time	450 ms	DVD Transfer-Rate	4430 kbytes/s
DVD Stop Time	10.0 s		
DUAL Random Access Read(1block) time	0.0033		
CD-R ErrorRate	0.0033	CD-RW ErrorRate	0.0033
DVD-R ErrorRate	0.0033	DVD-RW ErrorRate	0.0033

Rear Panel



- ⑨ Digital Audio Output
This is a connector for output of digital audio signal.

Pin	Name	Function
1	GND	Ground.
2	Digital Out	Digital audio signal output.

- ⑩ Audio Output
This is a connector for output of analog audio.
This connector is compatible with 'Molex 70553', choose a suitable connection cable.

Pin	Name	Function
1	L	Left channel audio output.
2	G	Ground.
3	G	Ground.
4	R	Right channel audio output.

- ⑪ Device Configuration Jumper
Switch becomes ON when short socket is put.
Make sure the power of the drive is off before changing jumper setting.
Pin # 1 is ON at the time of shipping from the plant.

Pin	Name	Function
1	MA	on The drive is used in master mode.
2	SL	on The drive is used in slave mode.
3	CS	on Using Cable Select function.
4		Reserved.
5		Reserved.

- ⑫ Host IDE Interface
This is a 40 pin I/O connector according to the ATA specifications.

- ⑬ DC Input

Pin	Name	Function
1	+12	Power supply input for DC +12 V.
2	G	Ground.
3	G	Ground.
4	+5	Power supply input for DC +5 V.

8.2 SPECIFICATIONS

[Setting]

This drive is Horizontal Use.

[Disc Size]

- 120 mm (4.72") / 80 mm (3.5")

[Data Transfer Rate]

Data Read (Sustained)

DVD Max. 5,400 KBytes/sec.

CD Max. 3,600 KBytes/sec.

(10.3 – 24X CAV Mode over 16 block transfer)

Data Write (Sustained)

DVD Ave. 2,859 KBytes/sec. (2X DVD-R)

CD Ave. 1,200 KBytes/sec. (8X CD-R)

Host Interface specification

PIO Mode 4, Multi word DMA Mode 2 16.6 Mbytes/sec.

- The data transfer rate may not be output due to disc conditions (scratches, etc.).

[Access Time/ Seek Time]

Access time (Random average)

DVD-ROM 200 ms CD-ROM 180 ms

Seek time (Random average)

DVD-ROM 150 ms CD-ROM 130 ms

[Audio Characteristic]

Line Out 0.7 ± 0.1 Vrms (at 10 k Ω load)

Headphone Out 0.6 ± 0.5 Vrms (at 32 Ω load)

[Others]

Power Supply

DC +12 V 0.9 A

DC +5 V 1.6 A

Dimensions 148 (W) x 42.3 (H) x 207.5 (D) mm

(including front panel) 5-27/32 (W) x 1-11/16 (H) x 8-5/32 (D) in.

Weight 1.1 kg (2.2 lb)

Operation temperature +5°C to +45°C (41°F to 113°F)

Operation humidity 5% to 85% (no condensation)

Storage temperature -40°C to +60°C (-40°F to 140°F)

Storage humidity 5% to 90% (no condensation)

[Accessories]

Short-circuit socket x 2

Audio cable x 1

Mounting screw x 4

Push rod x1

Operating instructions x 1

NOTE:

- Specifications and design subject to possible modifications without notice, due to improvements.

